

REMARKS

In the last Office Action, claims 1, 120, 121, 127 and 128 were rejected under 35 U.S.C. §102(b) as being anticipated by Brezoczky (EPA 0-549-236 A2). Claims 2-14, 101, 103, 104, 122-126, 129 and 130 were rejected under 35 U.S.C. §103(a) as being unpatentable over Brezoczky.

In accordance with the present response, independent claim 1 has been amended only to incorporate the subject matter of dependent claim 6, which has been canceled. Claim 7 has been amended only to depend on claim 1 in light of the cancelation of claim 6. Claims 3-5, 11-14, 101, 103, 104, 125 and 127-130 have been canceled without prejudice or admission and subject to applicants' right to file one or more continuing applications to pursue the subject matter of these claims. By the foregoing amendments, claims 1, 2, 7-9 and 120-122 are currently pending in this application.

Applicants most respectfully request entry of the foregoing amendments since they merely comprise a formal amendment made to dependent claim 7 and the incorporation of dependent claim 6 into corresponding base claim 1. Thus, no further consideration or search is necessitated by the amendments. In addition, the amendments substantially narrow any appealable issues because they present the claims in a narrowed form and cancel a significant number of other claims. The subject matter of the dependent claims has already been

considered by the Examiner on at least two previous occasions. Thus, entry of the foregoing amendments should not be denied.

Applicants respectfully traverse the Section 102 and Section 103 rejections of claims 1, 2, 6 (now the subject matter of independent claim 1), 7-9 and 120-122 and request reconsideration of their application in light of the foregoing amendments and the following discussion.

The present invention relates to a near-field optical head. With reference to the embodiments shown in Figs. 5 and 11, the near-field optical head 500 comprises a planar substrate 501 having a first surface, a second surface opposite the first surface, and an inverted conical or pyramidal hole 507 having a fine aperture at an apex thereof and extending through the first and second surfaces. As shown in Fig. 11, the inverted conical or pyramidal hole has at least one curved slant surface 1102. An optical waveguide 504 is disposed directly on the second surface of the planar substrate for propagating light along an optical path. A mirror 508 is disposed in the optical waveguide 504 for bending in the direction of the fine aperture the optical path of the light propagated through the optical waveguide 504.

By the foregoing construction, the provision of the inverted conical or pyramidal hole of the near-field optical head with a curved slant surface prevents the reduction in strength of near field light produced from the fine aperture

at the apex of the inverted conical or pyramidal hole. Accordingly, the light propagating efficiency of the near-field optical head is improved and a stronger near-field light is achieved, thereby resulting in more precise recording on a recording medium.

The foregoing advantages achieved by the structure of the near-field optical head of the invention embodied in the claims is in contrast to conventional near-field optical heads having a conical or pyramidal hole with a plurality of non-curved slant surfaces which suffer from flashing of propagating light at apexes between the non-curved slant surfaces that causes a decline of the near field light produced at the fine aperture of the inverted conical or pyramidal hole. Moreover, leaking of the propagating light at the apexes results in recording on a part of a recording medium that is not intended to be recorded. As a result, the light propagating efficiency of the near-field optical head is poor and recording cannot be carried out with precision.

Applicants respectfully submit that Brezoczky does not anticipate nor render obvious the invention recited in pending claims 1, 2, 7-9 and 120-122.

Brezoczky discloses an optical head comprising a planar substrate (i.e., slider) 31 (Fig. 3) or 51 (Figs. 4-5) having a cone-shaped aperture or hole 35. As recognized by the Examiner, the cone-shaped aperture or hole 35 in Brezoczky

does not have at least one curved slant surface. Thus, the optical head of Brezoczky suffers from the disadvantages as set forth above for conventional near-field optical heads.

In contrast, dependent claim 6, now the subject matter of amended independent claim 1, recites a planar substrate having a first surface, a second surface disposed opposite to the first surface, and an inverted conical or pyramidal hole extending through the first and second surfaces, the inverted conical or pyramidal hole having at least one fine aperture formed at an apex thereof and disposed in the first surface and having at least one curved slant surface.

In the final Office Action, the Examiner contends that one of ordinary skill in the art would have found it obvious to provide an inverted cone-shaped hole with "curved" slant surfaces because the provision of a cone-shaped hole with different degree of slant surfaces is "old and widely used." Applicants respectfully disagree with the Examiner's contention.

While recognizing that it is known to provide an inverted cone-shaped hole with slant surfaces having different degrees of slant, applicants respectfully submit that this knowledge does not render obvious the provision of an inverted conical or pyramidal hole with at least one curved slant surface, as recited in amended independent claim 1. There is

nothing in Brezoczky that would suggest providing the cone-shaped aperture or hole 35 with at least one curved slant surface.

Thus one of ordinary skill in the art would not have been led to modify Brezoczky to provide the cone-shaped aperture or hole 35 with at least one curved slant surface, as proposed by the Examiner in the statement of rejection. The only basis for such modification urged by the Examiner in the rejection is applicants' own disclosure, and such hindsight rejections are improper. See, for example, Diversitech Corp. v. Century Steps, Inc., 7 USPQ2d 1315, 1318 (Fed. Cir. 1988); In re Geiger, 2 USPQ2d 1276, 1278 (Fed. Cir. 1987); Panduit Corp. v. Dennison Manufacturing Co., 227 USPQ 337, 343 (Fed. Cir. 1985); Interconnect Planning Corp. v. Feil, 227 USPQ 543, 551 (Fed. Cir. 1985).

In order to support a claim rejection based upon obviousness under 35 U.S.C. §103, the Examiner must provide an evidentiary basis establishing the obviousness of each modification. The Examiner may do this by citing a reference which directly establishes this obviousness, or, the Examiner may otherwise set forth a line of reasoning consistent with and motivated by the cited art establishing that such modifications would have been obvious. Mere speculation or conclusory allegations are simply inadequate to meet this burden. There must be some teaching, reason, suggestion, or

motivation found in the prior art references to make a combination which renders an invention obvious within the meaning of 35 U.S.C §103. See, e.g., Symbol Technologies, Inc. v. Opticon, Inc., 935 F.2d 982, 989, 18 USPQ2d 1885 (Fed. Cir. 1991).

In order to set forth a prima facie case of obviousness, the Examiner must not only demonstrate that this teaching exists in the prior art, but that it would teach all limitations of the claim. This burden cannot be met by citing references that, even if combined, fail to teach explicitly recited limitations.

Stated otherwise, in rejecting a claim as obvious under 35 U.S.C. §103, the Examiner cannot simply rely on a combination or modification of references that teach some limitations of the claim, and make mere conclusory allegations that the combination teaches others as well.

In the instant case, the Examiner has not met his burden of establishing a prima facie case of obviousness as discussed above.

As noted by the Court of Appeals for the Federal Circuit in the case of In re Fritch, 23 USPQ2d 1780, 1783 (Fed. Cir. 1992):

'Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination. Under section 103, teachings of references can be combined only if there is some suggestion or incentive to do so.' Although couched in terms of combining teachings found in the prior art, the same inquiry must be carried out in the context of a purported obvious 'modification' of the prior art. The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification. Wilson and Hendrix fail to suggest any motivation for, or desirability of, the changes espoused by the Examiner and endorsed by the Board.

Here, the Examiner relied upon hindsight to arrive at the determination of obviousness. It is impermissible to use the claimed invention as an instruction manual or 'template' to piece together the teachings of the prior art so that the claimed invention is rendered obvious. This court has previously stated that '[o]ne cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.'

As further noted by the Federal Circuit in In re Oeticker, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992):

The prima facie case is a procedural tool of patent examination, allocating the burdens of going forward as between examiner and applicant. In re Spada, 911 F.2d 705, 707 n.3, 15 USPQ2d 1655, 1657 n.3 (Fed. Cir. 1990). The term 'prima facie case' refers only to the initial examination step. In re Piasecki, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984); In re Rinehart, 531 F.2d 1048, 1052, 189 USPQ 143, 147 (CCPA 1976). As discussed in In re Piasecki, the examiner bears the initial burden, on review of the prior art or on any other ground, of presenting a prima facie case of unpatentability. If that burden is met, the burden of coming forward with evidence or argument shifts to the applicant.

* * *

If examination at the initial stage does not produce a prima facie case of unpatentability, then without more the applicant is entitled to grant of the patent. See In re Grabiak, 769, F.2d 729, 733, 226 USPQ 870, 873 (Fed. Cir. 1985); In re Rinehart, supra.

In reviewing the examiner's decision on appeal, the Board must necessarily weigh all of the evidence and argument. An observation by the Board that the examiner made a prima facie case is not improper, as long as the ultimate determination of patentability is made on the entire record. In re Piasecki, 745 F.2d at 1472, 223 USPQ at 788; In re Rinehart, 531 F.2d at 1052, 189 USPQ at 147.

The Federal Circuit has therefore made it clear that the prior art must show an incentive to modify its teachings in order to render a claim obvious. Without such an incentive, a prima facie case of obviousness cannot be made.

Similarly, as the Board stated in Ex Parte Clapp, 227 USPQ 972, 973 (BPAI 1985):

To support the conclusion that the claimed combination is directed to obvious subject matter, either the references must expressly or impliedly expound the modifications urged by the examiner to have been obvious.

The same situation exists here. The Examiner has not provided an evidentiary basis establishing the obviousness of providing the cone-shaped aperture or hole 35 in Brezoczky with at least one curved slant surface. There is nothing in the reference to Brezoczky that would expressly or implicitly teach or suggest the modification urged by the Examiner and, therefore, Brezoczky does not directly establish this obviousness. Furthermore, the Examiner has not set forth a line of reasoning consistent with and motivated by the cited art establishing that such modification would have been obvious. Again, the only basis for the modification urged by the Examiner in the rejection is applicants' own disclosure, and such hindsight rejections are improper.

Claims 2, 7-9 and 120-122 depend on and contain all of the limitations of amended independent claim 1 and, therefore, distinguish from Brezoczky at least in the same manner as claim 1.

Moreover, there are separate grounds for patentability of several of the dependent claims.

For example, claim 2 includes the additional limitation that the optical waveguide extends into the inverted conical or pyramidal hole. With respect to this claim, the Examiner contends that it would have been obvious to form the optical waveguide (i.e., element denoted by reference numerals 46, 49, 61, 76 in Fig. 5) into a conical hole. Applicants respectfully disagree with the Examiner's contention.

In Brezoczky, the component denoted by reference numeral 49, which forms part of the optical waveguide, corresponds to a suspension arm from which the optical slider 51 is suspended (col. 7, lines 12-13). It is unclear from the statement of rejection how the Examiner proposes to modify Brezoczky's optical head such that the optical waveguide, which includes the suspension arm 49, would extend into a inverted conical or pyramidal hole of the optical head.

Moreover, even if possible to make such modification in Brezoczky, the Examiner has not cited any reference which directly establishes the obviousness of such modification, nor has the Examiner set forth a line of reasoning consistent with and motivated by the cited art establishing that such modifications would have been obvious. See, Symbol Technologies, Inc. v. Opticon, Inc., at 1885.

In view of the foregoing, applicants respectfully request that the rejections of claims 1, 2, 6 (now the subject matter of independent claim 1), 7-9 and 120-122 under 35 U.S.C. §§102(b), 103(a) as being anticipated and/or unpatentable over Brezoczky be withdrawn.

In view of the foregoing amendments and discussion,
the application is believed to be in allowable form.
Accordingly, entry of this amendment and favorable
reconsideration and allowance of the claims are most
respectfully requested.

Respectfully submitted,

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DECEMBER 12, 2007

Date